

SGCN and Conservation Actions Associated with Habitat Groupings

Habitat Grouping: Subtidal

Macrogroup Subtidal Mud Bottom

Habitat System Submerged Aquatic Vegetation

Habitat System Unvegetated

Macrogroup Subtidal Sand Bottom

Habitat System Submerged Aquatic Vegetation

Habitat System Unvegetated

Macrogroup Subtidal Mollusc Reefs

Habitat System Gastropod Reef

Habitat System Mussel Reef

Habitat System Oyster Reef

Macrogroup Subtidal Bedrock Bottom

Habitat System Bedrock

Habitat System Erect Epifauna

Habitat System Kelp Bed

Macrogroup Subtidal Coarse Gravel Bottom

Habitat System Coarse Gravel

Habitat System Erect Epifauna

Habitat System Kelp Bed

Macrogroup Subtidal Pelagic (Water Column)

Habitat System Confined Channel

Habitat System Nearshore

Habitat System Offshore

Habitat System Upwelling Zones

Species Associated with this Grouping
Total SGCN: 1: 18 2: 48 3: 13
Total SGCN (primary habitat): 1: 11 2: 41 3: 9

| Class | <i>Actinopterygii</i> (Ray-finned Fishes) | SGCN Category |
|---------|--|---------------|
| Species | <i>Acipenser brevirostrum</i> (Shortnose Sturgeon) | 1 |
| Species | <i>Acipenser oxyrinchus</i> (Atlantic Sturgeon) | 1 |
| Species | <i>Alosa aestivalis</i> (Blueback Herring) | 1 |
| Species | <i>Alosa pseudoharengus</i> (Alewife) | 2 |
| Species | <i>Alosa sapidissima</i> (American Shad) | 1 |
| Species | <i>Ammodytes americanus</i> (American Sand Lance) | 3 |
| Species | <i>Anarhichas lupus</i> (Atlantic Wolffish) | 2 |
| Species | <i>Anguilla rostrata</i> (American Eel) | 2 |
| Species | <i>Brosme brosme</i> (Cusk) | 2 |
| Species | <i>Gadus morhua</i> (Atlantic Cod) | 1 |
| Species | <i>Melanogrammus aeglefinus</i> (Haddock) | 1 |
| Species | <i>Morone saxatilis</i> (Striped Bass) | 2 |
| Species | <i>Osmerus mordax</i> (Rainbow Smelt) | 1 |
| Species | <i>Pseudopleuronectes americanus</i> (Winter Flounder) | 2 |
| Species | <i>Salmo salar</i> (Atlantic Salmon) | 1 |
| Species | <i>Salvelinus fontinalis</i> (Brook Trout) | 3 |
| Species | <i>Thunnus thynnus</i> (Atlantic Bluefin Tuna) | 2 |
| Class | <i>Anthozoa</i> (Corals, Sea Pens, Sea Fans, Sea Anemones) | SGCN Category |

SGCN and Conservation Actions Associated with Habitat Groupings

Habitat Grouping: Subtidal

| | | |
|--------------|---|----------------------|
| Species | <i>Alcyonium digitatum</i> (Dead Man's Fingers) | 3 |
| Species | <i>Gersemia rubiformis</i> (Sea Strawberry) | 2 |
| Class | <i>Asteroidea</i> (Sea Stars) | SGCN Category |
| Species | <i>Asterias forbesi</i> (Forbes's Starfish) | 2 |
| Species | <i>Asterias rubens</i> (Common Sea Star) | 2 |
| Species | <i>Crossaster papposus</i> (Common Sun Star) | 2 |
| Species | <i>Solaster endeca</i> (Purple Sunstar) | 2 |
| Species | <i>Stephanasterias albula</i> (White Sea Star) | 2 |
| Class | <i>Aves</i> (Birds) | SGCN Category |
| Species | <i>Alca torda</i> (Razorbill) | 2 |
| Species | <i>Ardea herodias</i> (Great Blue Heron) | 2 |
| Species | <i>Aythya marila</i> (Greater Scaup) | 2 |
| Species | <i>Bucephala islandica</i> (Barrow's Goldeneye) | 1 |
| Species | <i>Chroicocephalus philadelphia</i> (Bonaparte's Gull) | 3 |
| Species | <i>Fratercula arctica</i> (Atlantic Puffin) | 2 |
| Species | <i>Histrionicus histrionicus</i> (Harlequin Duck) | 1 |
| Species | <i>Leucophaeus atricilla</i> (Laughing Gull) | 3 |
| Species | <i>Oceanodroma leucorhoa</i> (Leach's Storm-petrel) | 3 |
| Species | <i>Phalacrocorax carbo</i> (Great Cormorant) | 1 |
| Species | <i>Phalaropus lobatus</i> (Red-necked Phalarope) | 2 |
| Species | <i>Puffinus gravis</i> (Great Shearwater) | 3 |
| Species | <i>Sterna dougallii</i> (Roseate Tern) | 1 |
| Species | <i>Sterna hirundo</i> (Common Tern) | 2 |
| Species | <i>Sterna paradisaea</i> (Arctic Tern) | 1 |
| Class | <i>Bivalvia</i> (Marine And Freshwater Molluscs) | SGCN Category |
| Species | <i>Crassostrea virginica</i> (Eastern Oyster) | 3 |
| Species | <i>Mercenaria mercenaria</i> (Hard-shelled Clam) | 3 |
| Species | <i>Mya arenaria</i> (Softshell Clam) | 3 |
| Species | <i>Mytilus edulis</i> (Blue Mussel) | 3 |
| Species | <i>Zirfaea crispata</i> (Atlantic Great Piddock) | 2 |
| Class | <i>Chondrichthyes</i> (Sharks, Rays, And Skates) | SGCN Category |
| Species | <i>Amblyraja radiata</i> (Thorny Skate) | 2 |
| Species | <i>Dipturus laevis</i> (Barndoor Skate) | 2 |
| Species | <i>Isurus oxyrinchus</i> (Shortfin Mako) | 2 |
| Species | <i>Lamna nasus</i> (Porbeagle) | 2 |
| Species | <i>Leucoraja ocellata</i> (Winter Skate) | 2 |
| Species | <i>Malacoraja senta</i> (Smooth Skate) | 2 |
| Species | <i>Prionace glauca</i> (Blue Shark) | 3 |
| Species | <i>Sphyrna zygaena</i> (Smooth Hammerhead) | 3 |
| Class | <i>Echinoidea</i> (Sea Urchins) | SGCN Category |
| Species | <i>Strongylocentrotus droebachiensis</i> (Green Sea Urchin) | 2 |

SGCN and Conservation Actions Associated with Habitat Groupings

Habitat Grouping: Subtidal

| Class | <i>Gastropoda</i> (Aquatic And Terrestrial Snails) | SGCN Category |
|---------|--|---------------|
| Species | <i>Arrhoges occidentalis</i> (American Pelican Foot) | 2 |
| Species | <i>Boreotrophon clathratus</i> (Clathrate Trophon) | 2 |
| Species | <i>Boreotrophon truncatus</i> (Murex) | 2 |
| Species | <i>Colus pygmaeus</i> (Colus Snail) | 2 |
| Species | <i>Ptychatractus ligatus</i> (Spindle Shell) | 2 |
| Class | <i>Holothuroidea</i> (Sea Cucumbers) | SGCN Category |
| Species | <i>Cucumaria frondosa</i> (Orange-footed Sea Cucumber) | 2 |
| Species | <i>Psolus fabricii</i> (Psolus) | 2 |
| Species | <i>Psolus phantapus</i> (Psolus) | 2 |
| Species | <i>Thyonidium drummondii</i> (Sea Cucumber) | 2 |
| Class | <i>Malacostraca</i> (Crustaceans) | SGCN Category |
| Species | <i>Lebbeus groenlandicus</i> (Spiny Lebbeid Shrimp) | 2 |
| Species | <i>Lebbeus polaris</i> (Polar Lebbeid Shrimp) | 2 |
| Species | <i>Pandalus borealis</i> (Northern Shrimp) | 1 |
| Class | <i>Mammalia</i> (Mammals) | SGCN Category |
| Species | <i>Balaenoptera borealis</i> (Sei Whale) | 2 |
| Species | <i>Balaenoptera musculus</i> (Blue Whale) | 2 |
| Species | <i>Balaenoptera physalus</i> (Finback Whale) | 2 |
| Species | <i>Eubalaena glacialis</i> (North Atlantic Right Whale) | 1 |
| Species | <i>Megaptera novaeangliae</i> (Humpback Whale) | 1 |
| Species | <i>Phocoena phocoena</i> (Harbor Porpoise) | 2 |
| Species | <i>Physeter macrocephalus</i> (Sperm Whale) | 2 |
| Class | <i>Merostomata</i> (Horseshoe Crabs And Sea Scorpions) | SGCN Category |
| Species | <i>Limulus polyphemus</i> (Horseshoe Crab) | 1 |
| Class | <i>Ophiuroidea</i> (Brittle Stars) | SGCN Category |
| Species | <i>Gorgonocephalus arcticus</i> (Northern Basket Starfish) | 2 |
| Class | <i>Reptilia</i> (Reptiles) | SGCN Category |
| Species | <i>Caretta caretta</i> (Loggerhead Seaturtle) | 2 |
| Species | <i>Chelonia mydas</i> (Green Seaturtle) | 2 |
| Species | <i>Dermochelys coriacea</i> (Leatherback Seaturtle) | 1 |
| Species | <i>Lepidochelys kempii</i> (Kemp's Ridley Seaturtle) | 2 |
| Class | <i>Rhynchonellata</i> (Brachiopods) | SGCN Category |
| Species | <i>Terebratulina septentrionalis</i> (Lamp Shell) | 2 |

Habitat Stressors:

Habitat-specific stressors are assigned to the Habitat Macrogroup(s) listed in the Habitat Grouping above. Habitat Macrogroup reports can be found in Maine's 2015 Wildlife Action Plan: Element 2, Table 2-3. Click on the Habitat Macrogroup of interest to launch a habitat based report summarizing relevant stressors and associated SGCN.

SGCN and Conservation Actions Associated with Habitat Groupings

Habitat Grouping: Subtidal

Conservation Actions Assigned to this Habitat Grouping:

| | | | |
|----------------------------|-------------------------------------|--------------------------------------|------------------|
| Conservation Action | Category: Habitat Management | Biological Priority: critical | Type: new |
|----------------------------|-------------------------------------|--------------------------------------|------------------|

Find ways to support culvert replacement in or near intertidal, subtidal, and tidal marsh habitats using best management practices

Stressor(s) Addressed By This Conservation Action

Utility and Service Lines, Shipping Lanes, Roads and Railroads, Dams and Water Management-Use

| | | | |
|----------------------------|-------------------------------------|--------------------------------------|-----------------------|
| Conservation Action | Category: Habitat Management | Biological Priority: critical | Type: on-going |
|----------------------------|-------------------------------------|--------------------------------------|-----------------------|

Encourage partnership projects among transportation agencies, utility companies, etc. to facilitate fish passage and maintain connectivity in or near subtidal, intertidal, and tidal marsh habitats especially in cases where structures have different purposes for different users

Stressor(s) Addressed By This Conservation Action

Dams and Water Management-Use, Roads and Railroads, Shipping Lanes, Utility and Service Lines

| | | | |
|----------------------------|-------------------------------------|--------------------------------------|-----------------------|
| Conservation Action | Category: Habitat Management | Biological Priority: critical | Type: on-going |
|----------------------------|-------------------------------------|--------------------------------------|-----------------------|

Decommission remnant or unused roads and other structures in or near tidal marsh, intertidal, and subtidal habitats

Stressor(s) Addressed By This Conservation Action

Utility and Service Lines, Shipping Lanes, Roads and Railroads, Dams and Water Management-Use

| | | | |
|----------------------------|-------------------------------------|----------------------------------|-----------------------|
| Conservation Action | Category: Habitat Management | Biological Priority: high | Type: on-going |
|----------------------------|-------------------------------------|----------------------------------|-----------------------|

Promote voluntary baywide (or scale of ecological relevance) coordination of shared resources and education addressing the impacts of fishing and harvesting aquatic resources on SGCN intertidal and subtidal habitats

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

| | | | |
|----------------------------|-------------------------------------|----------------------------------|-----------------------|
| Conservation Action | Category: Habitat Management | Biological Priority: high | Type: on-going |
|----------------------------|-------------------------------------|----------------------------------|-----------------------|

Restore and improve conservation management at state and municipal levels to reduce impacts of effluents and wastewater or intertidal and subtidal SGCN habitats

Stressor(s) Addressed By This Conservation Action

Industrial and Military Effluents, Agricultural and Forestry Effluents, Domestic and Urban Waste Water

| | | | |
|----------------------------|-------------------------------------|----------------------------------|-----------------------|
| Conservation Action | Category: Habitat Management | Biological Priority: high | Type: on-going |
|----------------------------|-------------------------------------|----------------------------------|-----------------------|

Mitigate coastal acidification of intertidal and subtidal habitats using strategies similar to those for reducing effects of effluents/wastewater

Stressor(s) Addressed By This Conservation Action

Temperature Extremes, Habitat Shifting or Alteration, Storms and Flooding

| | | | |
|----------------------------|-------------------------------------|----------------------------------|-----------------------|
| Conservation Action | Category: Habitat Management | Biological Priority: high | Type: on-going |
|----------------------------|-------------------------------------|----------------------------------|-----------------------|

Model effects of sea level rise and other climate change factors on subtidal SGCN patterns including physiology, migration patterns, and trophic changes

Stressor(s) Addressed By This Conservation Action

Temperature Extremes, Habitat Shifting or Alteration, Storms and Flooding

| | | | |
|----------------------------|-------------------------------------|----------------------------------|-----------------------|
| Conservation Action | Category: Habitat Management | Biological Priority: high | Type: on-going |
|----------------------------|-------------------------------------|----------------------------------|-----------------------|

Use technology to reduce discharge of wastewater and effluents into intertidal and subtidal SGCN habitats

Stressor(s) Addressed By This Conservation Action

Domestic and Urban Waste Water, Agricultural and Forestry Effluents, Industrial and Military Effluents

| | | | |
|----------------------------|-------------------------------------|----------------------------------|-----------------------|
| Conservation Action | Category: Habitat Management | Biological Priority: high | Type: on-going |
|----------------------------|-------------------------------------|----------------------------------|-----------------------|

Assess new aquaculture sites for potential positive, benign, or negative species interactions with the surrounding habitat and ecological systems

SGCN and Conservation Actions Associated with Habitat Groupings

Habitat Grouping: Subtidal

Stressor(s) Addressed By This Conservation Action

Marine and Freshwater Aquaculture

| Conservation Action | Category: Habitat Management | Biological Priority: moderate | Type: new |
|---|------------------------------|-------------------------------|-----------|
| Expand research and pilot studies to test the efficacy of increasing pH of mudflats (e.g., using harvested shell waste) to restore more favorable habitat conditions for intertidal and subtidal SGCN | | | |

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

| Conservation Action | Category: Habitat Management | Biological Priority: moderate | Type: new |
|---|------------------------------|-------------------------------|-----------|
| Alter shipping lanes and dredging plans in intertidal and subtidal habitats to minimize biological and ecological impacts to SGCN | | | |

Stressor(s) Addressed By This Conservation Action

Agricultural and Forestry Effluents, Domestic and Urban Waste Water, Industrial and Military Effluents

| Conservation Action | Category: Habitat Management | Biological Priority: moderate | Type: on-going |
|--|------------------------------|-------------------------------|----------------|
| Conduct training and workshops to support knowledge of SGCN and their habitats | | | |

Stressor(s) Addressed By This Conservation Action

Recreational Activities

| Conservation Action | Category: Habitat Management | Biological Priority: moderate | Type: on-going |
|--|------------------------------|-------------------------------|----------------|
| Improve response plans for industrial spills (e.g., oil spills) in intertidal and subtidal habitats and support research on oil dispersants and short and long term effect of oil spills | | | |

Stressor(s) Addressed By This Conservation Action

Industrial and Military Effluents, Agricultural and Forestry Effluents, Domestic and Urban Waste Water

| Conservation Action | Category: Policy | Biological Priority: high | Type: new |
|---|------------------|---------------------------|-----------|
| Provide incentives for building Stream Smart structures and road crossings in or near intertidal, subtidal, and tidal marsh habitats that allow for changing environmental conditions such as sea level rise and increased flooding | | | |

Stressor(s) Addressed By This Conservation Action

Utility and Service Lines, Shipping Lanes, Roads and Railroads, Dams and Water Management-Use

| Conservation Action | Category: Policy | Biological Priority: high | Type: on-going |
|---|------------------|---------------------------|----------------|
| Increase awareness about invasive species and problems following the introduction of invasive species in the shipping, transportation, and other industries to prevent introductions and spread of invasive species in intertidal and subtidal habitats | | | |

Stressor(s) Addressed By This Conservation Action

Viral-Prion-induced Diseases, Problematic Native Species-Diseases, Invasive Non-native-Alien Species-Diseases

| Conservation Action | Category: Policy | Biological Priority: high | Type: on-going |
|--|------------------|---------------------------|----------------|
| Increase capacity for enforcement of current laws and regulations regarding proper infrastructure (e.g., roads, dams, utility lines, shipping lanes) construction, maintenance, water quality, and fish passage in tidal marsh, intertidal, and subtidal SGCN habitats | | | |

Stressor(s) Addressed By This Conservation Action

Dams and Water Management-Use, Roads and Railroads, Shipping Lanes, Utility and Service Lines

| Conservation Action | Category: Policy | Biological Priority: high | Type: on-going |
|---|------------------|---------------------------|----------------|
| Time dredging projects in subtidal and tidal marsh habitats to minimize harm to SGCN based on migration and spawning cycles | | | |

Stressor(s) Addressed By This Conservation Action

Mining and Quarrying, Shipping Lanes

| Conservation Action | Category: Policy | Biological Priority: moderate | Type: new |
|---|------------------|-------------------------------|-----------|
| Explore value of utilizing conservation leases to limit uses/stresses in intertidal and subtidal habitats | | | |

SGCN and Conservation Actions Associated with Habitat Groupings

Habitat Grouping: Subtidal

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

| Conservation Action | Category: Policy | Biological Priority: moderate | Type: on-going |
|--|------------------|-------------------------------|----------------|
| Expand existing education and incentive programs for lawn care companies, homeowners, and municipalities to reduce wastewater and effluent inputs and effects on intertidal and subtidal SGCN habitats | | | |

Stressor(s) Addressed By This Conservation Action

Industrial and Military Effluents, Agricultural and Forestry Effluents, Domestic and Urban Waste Water

| Conservation Action | Category: Policy | Biological Priority: moderate | Type: on-going |
|---|------------------|-------------------------------|----------------|
| Increase capacity for municipal planning to reduce wastewater and effluent effects on intertidal and subtidal SGCN habitats while also accounting for future environmental change | | | |

Stressor(s) Addressed By This Conservation Action

Industrial and Military Effluents, Agricultural and Forestry Effluents, Domestic and Urban Waste Water

| Conservation Action | Category: Policy | Biological Priority: moderate | Type: on-going |
|--|------------------|-------------------------------|----------------|
| Increase enforcement for dumping/litter/gear abandonment in intertidal and subtidal habitats | | | |

Stressor(s) Addressed By This Conservation Action

Garbage and Solid Waste

| Conservation Action | Category: Policy | Biological Priority: moderate | Type: on-going |
|--|------------------|-------------------------------|----------------|
| Support communities with retrofitting existing effluent and wastewater treatment infrastructure and plan for sea level rise by providing economic incentives and education | | | |

Stressor(s) Addressed By This Conservation Action

Industrial and Military Effluents, Agricultural and Forestry Effluents, Domestic and Urban Waste Water

| Conservation Action | Category: Policy | Biological Priority: moderate | Type: on-going |
|--|------------------|-------------------------------|----------------|
| Provide stewardship/conservation incentives to harvesters working in intertidal and subtidal SGCN habitats | | | |

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

| Conservation Action | Category: Policy | Biological Priority: moderate | Type: on-going |
|---|------------------|-------------------------------|----------------|
| Site shipping lanes and dredging projects to minimize negative impacts to intertidal and subtidal SGCN and their habitats | | | |

Stressor(s) Addressed By This Conservation Action

Mining and Quarrying, Shipping Lanes

| Conservation Action | Category: Public Outreach | Biological Priority: critical | Type: on-going |
|--|---------------------------|-------------------------------|----------------|
| Continue/expand litter reduction programs/public education in intertidal and subtidal habitats | | | |

Stressor(s) Addressed By This Conservation Action

Garbage and Solid Waste

| Conservation Action | Category: Public Outreach | Biological Priority: high | Type: new |
|---|---------------------------|---------------------------|-----------|
| Improve knowledge of effects of renewable energy on intertidal and subtidal SGCN habitats | | | |

Stressor(s) Addressed By This Conservation Action

Renewable Energy

| Conservation Action | Category: Public Outreach | Biological Priority: high | Type: on-going |
|--|---------------------------|---------------------------|----------------|
| Continue/expand marine debris recovery programs in intertidal and subtidal habitats and education to fishermen | | | |

Stressor(s) Addressed By This Conservation Action

Garbage and Solid Waste

SGCN and Conservation Actions Associated with Habitat Groupings

Habitat Grouping: Subtidal

| | | | |
|---|----------------------------------|--------------------------------------|-----------------------|
| Conservation Action | Category: Public Outreach | Biological Priority: high | Type: on-going |
| Provide education and outreach through local meetings and trainings (e.g., Stream Smart) on techniques, problems and ecological effects of dams, roads, shipping lanes, and utility corridors on intertidal, subtidal, and tidal marsh habitats | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Utility and Service Lines, Shipping Lanes, Roads and Railroads, Dams and Water Management-Use | | | |
| Conservation Action | Category: Public Outreach | Biological Priority: high | Type: on-going |
| Increase outreach and education on preventing the spread of invasive/problematic species and diseases in intertidal, subtidal, and tidal marsh habitats | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Problematic Native Species-Diseases, Invasive Non-native-Alien Species-Diseases, Viral-Prion-induced Diseases | | | |
| Conservation Action | Category: Public Outreach | Biological Priority: high | Type: on-going |
| Increase leadership opportunities and education regarding climate change mitigation and adaptation in intertidal and subtidal habitats | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Habitat Shifting or Alteration, Storms and Flooding, Temperature Extremes | | | |
| Conservation Action | Category: Public Outreach | Biological Priority: high | Type: on-going |
| Increase capacity for local engagement in data collection, surveys, and management of intertidal and subtidal SGCN and their habitats that fosters partnerships among harvesters, citizens, scientists, and managers | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Fishing and Harvesting of Aquatic Resources | | | |
| Conservation Action | Category: Public Outreach | Biological Priority: moderate | Type: new |
| Develop best management practices for maintaining energy facilities in intertidal and subtidal habitats | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Renewable Energy | | | |
| Conservation Action | Category: Public Outreach | Biological Priority: moderate | Type: new |
| Expand existing education and research at the management level to improve understanding and management ability to reduce wastewater and effluent inputs and effects into intertidal and subtidal SGCN habitats | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Industrial and Military Effluents, Agricultural and Forestry Effluents, Domestic and Urban Waste Water | | | |
| Conservation Action | Category: Public Outreach | Biological Priority: moderate | Type: on-going |
| Continue partnerships between anglers, guides, scientists, and managers to collect biological information and catch data to use in population assessments and identifying species habitat use and behavior | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Recreational Activities | | | |
| Conservation Action | Category: Public Outreach | Biological Priority: moderate | Type: on-going |
| Provide outreach and education to recreational marine harvesters on proper catch and release methods to minimize trauma (including barotrauma) | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Recreational Activities | | | |
| Conservation Action | Category: Public Outreach | Biological Priority: moderate | Type: on-going |
| Continue to work with recreational marine charter captains to collect accurate data that can be used to assess SGCN populations | | | |

SGCN and Conservation Actions Associated with Habitat Groupings

Habitat Grouping: Subtidal

Stressor(s) Addressed By This Conservation Action

Recreational Activities

| Conservation Action | Category: Public Outreach | Biological Priority: moderate | Type: on-going |
|--|---------------------------|-------------------------------|----------------|
| Promote use of more targeted fishing techniques in intertidal and subtidal habitats (e.g., bycatch reduction and not disturbing habitat) by encouraging discussions between harvesters, ecologists, and managers | | | |

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

| Conservation Action | Category: Research | Biological Priority: critical | Type: new |
|---|--------------------|-------------------------------|-----------|
| Create a coastal acidification budget to determine which factors (i.e. point, non-point source pollution, atmospheric CO ₂ , etc.) are most important in driving acidification nearshore in intertidal and subtidal habitats | | | |

Stressor(s) Addressed By This Conservation Action

Temperature Extremes, Habitat Shifting or Alteration, Storms and Flooding

| Conservation Action | Category: Research | Biological Priority: critical | Type: new |
|--|--------------------|-------------------------------|-----------|
| Identify local intertidal and subtidal ocean acidification and sea surface temperature refuges and resilient species | | | |

Stressor(s) Addressed By This Conservation Action

Temperature Extremes, Habitat Shifting or Alteration, Storms and Flooding

| Conservation Action | Category: Research | Biological Priority: critical | Type: new |
|--|--------------------|-------------------------------|-----------|
| Investigate offshore changes in circulation patterns, plankton distribution and abundance, and other bio-chemical and physical processes | | | |

Stressor(s) Addressed By This Conservation Action

Temperature Extremes, Habitat Shifting or Alteration, Storms and Flooding

| Conservation Action | Category: Research | Biological Priority: critical | Type: on-going |
|---|--------------------|-------------------------------|----------------|
| Improve mapping of intertidal and subtidal habitats and include information on SGCN movements | | | |

Stressor(s) Addressed By This Conservation Action

Renewable Energy

| Conservation Action | Category: Research | Biological Priority: high | Type: new |
|--|--------------------|---------------------------|-----------|
| Encourage installation of lower cost SGCN-friendly infrastructure in and near subtidal, intertidal, and tidal marsh habitats through technology development and transfer of technology | | | |

Stressor(s) Addressed By This Conservation Action

Utility and Service Lines, Shipping Lanes, Roads and Railroads, Dams and Water Management-Use

| Conservation Action | Category: Research | Biological Priority: high | Type: on-going |
|---|--------------------|---------------------------|----------------|
| Develop better understanding of climate change effects on intertidal and subtidal SGCN and ecosystem interactions | | | |

Stressor(s) Addressed By This Conservation Action

Lack of knowledge

| Conservation Action | Category: Research | Biological Priority: high | Type: on-going |
|--|--------------------|---------------------------|----------------|
| Improve understanding of distribution, biology, and ecology of non-commercially harvested intertidal and subtidal SGCN | | | |

Stressor(s) Addressed By This Conservation Action

Lack of knowledge

| Conservation Action | Category: Research | Biological Priority: high | Type: on-going |
|---|--------------------|---------------------------|----------------|
| Improve knowledge of intertidal and subtidal SGCN habitat use and migration patterns to better inform renewable energy project siting | | | |

Stressor(s) Addressed By This Conservation Action

Renewable Energy

SGCN and Conservation Actions Associated with Habitat Groupings

Habitat Grouping: Subtidal

| | | | |
|--|--|--------------------------------------|-----------------------|
| Conservation Action | Category: Research | Biological Priority: high | Type: on-going |
| Improve modeling (at local and Gulf of Maine scales) of sea level rise effects on intertidal and subtidal SGCN habitats and incorporate into planning | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Temperature Extremes, Habitat Shifting or Alteration, Storms and Flooding | | | |
| Conservation Action | Category: Research | Biological Priority: high | Type: on-going |
| Research the feasibility of diversifying Maine's marine fisheries of SGCN in response to changing environmental variables | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Storms and Flooding, Habitat Shifting or Alteration, Temperature Extremes | | | |
| Conservation Action | Category: Research | Biological Priority: moderate | Type: on-going |
| Determine accuracy of commercial harvester- and dealer-reported landings and recreational fishing reports and surveys for target intertidal and subtidal SGCN and bycatch | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Fishing and Harvesting of Aquatic Resources | | | |
| Conservation Action | Category: Research | Biological Priority: moderate | Type: on-going |
| Improve understanding of intertidal and subtidal SGCN distributions especially in regards to ecosystem interactions and predator prey relationships | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Lack of knowledge | | | |
| Conservation Action | Category: Research | Biological Priority: moderate | Type: on-going |
| Improve understanding of effects of energy development on bird and other SGCN use of migration corridors in intertidal and subtidal habitats | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Renewable Energy | | | |
| Conservation Action | Category: Research | Biological Priority: moderate | Type: on-going |
| Continue to work with industry to minimize escape of aquaculture-raised individuals | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Marine and Freshwater Aquaculture | | | |
| Conservation Action | Category: Research | Biological Priority: moderate | Type: on-going |
| Investigate the effects of various harvesting practices on intertidal and subtidal SGCN habitats and on trophic and ecological processes | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Fishing and Harvesting of Aquatic Resources | | | |
| Conservation Action | Category: Survey and Monitoring | Biological Priority: high | Type: on-going |
| Develop monitoring systems and rapid response plans to prevent the colonization of invasive/problematic species and diseases in intertidal, subtidal, and tidal marsh habitats | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Invasive Non-native-Alien Species-Diseases, Problematic Native Species-Diseases, Viral-Prion-induced Diseases | | | |
| Conservation Action | Category: Survey and Monitoring | Biological Priority: high | Type: on-going |
| Continue monitoring potential and active aquaculture sites with a focus on SGCN and important habitats | | | |
| Stressor(s) Addressed By This Conservation Action | | | |
| Fishing and Harvesting of Aquatic Resources | | | |

SGCN and Conservation Actions Associated with Habitat Groupings

Habitat Grouping: Subtidal

| | | | |
|----------------------------|--|--------------------------------------|-----------------------|
| Conservation Action | Category: Survey and Monitoring | Biological Priority: moderate | Type: on-going |
|----------------------------|--|--------------------------------------|-----------------------|

Continue to improve rapid response for oil and gas spills in intertidal and subtidal habitats, including state agencies efforts to have most up-to-date species maps, rapid response protocols in place, and regular scenario training

Stressor(s) Addressed By This Conservation Action

Mining and Quarrying, Shipping Lanes

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|----------------------------|--|--------------------------------------|-----------------------|
| Conservation Action | Category: Survey and Monitoring | Biological Priority: moderate | Type: on-going |
|----------------------------|--|--------------------------------------|-----------------------|

Develop coastal focus areas encompassing marine habitats with high concentrations of SGCN using improved species occurrence maps

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

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|----------------------------|--|--------------------------------------|-----------------------|
| Conservation Action | Category: Survey and Monitoring | Biological Priority: moderate | Type: on-going |
|----------------------------|--|--------------------------------------|-----------------------|

Expand surveys of recreational fishing efforts to include SGCN that are not targeted in current survey efforts

Stressor(s) Addressed By This Conservation Action

Recreational Activities

| | | | |
|----------------------------|--|--------------------------------------|-----------------------|
| Conservation Action | Category: Survey and Monitoring | Biological Priority: moderate | Type: on-going |
|----------------------------|--|--------------------------------------|-----------------------|

More frequently update intertidal and subtidal SGCN habitat maps and compare to historical maps to monitor changes in distribution over time

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

Species Conservation Actions:

Conservation actions that may benefit species associated with this habitat grouping can be found in Maine's 2015 Wildlife Action Plan: Element 1, Table 1-3. Click on the species of interest to launch a species based report summarizing relevant conservation actions and associated habitats.

The Wildlife Action Plan was developed through a lengthy participatory process with state agencies, targeted conservation partners, and the general public. The Plan is non-regulatory. The species, stressors, and voluntary conservation actions identified in the Plan complement, but do not replace, existing work programs and priorities by state agencies and partners.